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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09 363,191

07/29/1999

NAOYUKI KOFUJI

H-811

7803

24956

7590

10/24/2002

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EXAMINER

ALEJANDRO MULERO, LUZ L

ART UNIT

PAPER NUMBER

1763

DATE MAILED: 10/24/2002

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/363,191

Applicant(s)

KOFUJI ET AL.

Examiner

Luz L. Alejandro

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6,8,9 and 34-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,8,9 and 34-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims 8 and 9 are objected to because of the following informalities: at line 8 of both claims, before "outside", -- is located -- should be inserted for proper grammar.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 6, and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Yokogawa et al., EP 0,779,644 A2.

Yokogawa et al. shows the invention as claimed including a dry etching apparatus for treating a body (see Fig. 7) comprising: a chamber; a holder 111 in the chamber to receive a body 310 to be treated; means 120 for introducing the gas into the chamber; means for exhausting the gas in the chamber; a power supply 304 of ultra high frequency of 500 MHz; a microstrip antenna 308 coupled to the power supply and having a discoidal form (see fig. 8); and wherein the quartz dielectric plates 306 and 306' serve as separation plates between the antenna and the chamber (see col. 12-line 10 to col. 13-line 32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokogawa et al., EP 0,779,644 A2.

Yokogawa et al. is applied as above but fails to expressly disclose that the antenna is located in an atmosphere different than the low vacuum in which the exhausting means is located and that the separation means is located between both locations. However, Yokogawa et al. shows (see fig. 12) an apparatus in which the antenna is located in such a claimed atmosphere that can be readily manufactured and maintained (see col. 16-line 15 to col. 17-line 10) and a coil 604 is located outside the

chamber. Therefore, in view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus on the embodiment disclosed in the rejection under 35 USC 102 of claims 1-2, 6, and 34-36 above (figure 7), as shown by the embodiment of fig. 12 of Yokogawa et al., because in such a way the apparatus can be readily manufactured and maintained.

Furthermore, Yokogawa et al. states that the size of the circular conductive plate is set to a diameter in which a specific resonance mode of the electromagnetic wave can be obtained (col. 5, lines 33-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the size of the conductive plate as to obtain the desired claimed resonance mode of electromagnetic waves, as to optimize the apparatus and/or the process performed in the apparatus.

With respect to claim 4, official notice was taken with respect to the well known use of showerheads for uniform distribution of gases in the office action mailed 5/22/01 and therefore this limitation is taken to be admitted prior art. With respect to the claimed distance between the showerhead and the substrate holder, such limitation is considered to involve routine optimization which has been held to be within the level of ordinary skill in the art. Therefore, one of ordinary skill in the art at the time the invention was made would have modified Yokogawa et al. by having a distance between the gas introduction means and the substrate holder of 100 mm in order to optimize the apparatus and the process being performed in the apparatus.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yokogawa et al., EP 0,779,644 A2 in view of Nakano et al., U.S. Patent 6,155,202.

Yokogawa et al. is applied as above but fails to expressly disclose that the antenna is located in an atmosphere different than the low vacuum in which the exhausting means is located and that the separation means is located between both locations. However, Yokogawa et al. shows (see fig. 12) an apparatus in which the antenna is located in such a claimed atmosphere that can be readily manufactured and maintained (see col. 16-line 15 to col. 17-line 10) and a coil 604 is located outside the chamber. Therefore, in view of this disclosure, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus on the embodiment disclosed in the rejection under 35 USC 102 of claims 1-2, 6, and 34-36 above (figure 7), as shown by the embodiment of fig. 12 of Yokogawa et al., because in such a way the apparatus can be readily manufactured and maintained.

Furthermore, Yokogawa et al. does not expressly disclose that the power supply is provided in the form of a cone, but it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Yokogawa et al. as to provide the power supply in the form of a cone because, as disclosed by Nakano et al., better power consumption efficiency and optimization of the film being formed results (see col. 11-lines 40-45 and fig. 16 and its description).

Response to Arguments

Applicant's arguments filed 9/16/02 have been fully considered but they are not persuasive. Applicant argues that Yokogawa et al. fails to show a microstrip antenna of discoidal form because the microstrip antenna in Yokogawa et al. is divided into four portions. However, by looking at fig. 8 it is clear that the overall shape of the microstrip antenna 308, as shown by the boundaries of the antenna, is discoidal. Regarding the use of Nakano et al. for plasma processing rather than plasma etching specifically, it is clear that plasma processing includes processes such as plasma etching and with the proper choice of gases the apparatus of Nakano et al. is capable of conducting plasma etching processes. Therefore, the combination of Yokogawa et al. with Nakano et al. is proper.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

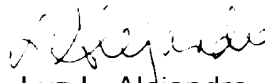
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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 703-305-4545. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


Luz L. Alejandro
Patent Examiner
Art Unit 1763

October 22, 2002